

CLAIMS

1. A method for regenerating a catalytic fuel processor, while it is being used to supply hydrogen to a fuel cell, comprising any one or more of the steps of:

- continuing to pass fuel, air and steam through a reforming catalyst whilst the catalyst is heated by an external heat source such that the temperature of the catalyst may be adjusted,
- continuing to pass fuel, air and steam through a reforming catalyst and modulating the air and/or steam feed rate,
- continuing to pass, air, fuel and steam through a reforming catalyst and modulating the feed-rate of the fuel.
- continuing to pass fuel, air and steam through a reforming catalyst wherein an oxygenate is added to the feed.

and maintaining the hydrogen concentration in dry reformat above 25% throughout the operation of the processor.

2. A method for preventing or retarding the de-activation of a catalytic fuel processor while it is being used to supply hydrogen to a fuel cell comprising any one or more of the steps of:

- continuing to pass fuel, air and steam through a reforming catalyst whilst the catalyst is heated by an external heat source such that the temperature of the catalyst may be adjusted,
- continuing to pass fuel, air and steam through a reforming catalyst and modulating the air and/or steam feed rate,
- continuing to pass air, fuel and steam through a reforming catalyst and modulating the feed-rate of the fuel.
- continuing to pass fuel, air and steam through a reforming catalyst wherein an oxygenate is added to the feed.

and maintaining the hydrogen concentration in dry reformat above 25% throughout the operation of the processor.

3. A method according to either claim 1 or claim 2, whereby water is temporarily
5 added to the fuel.

4. A method according to claims 1 or 2 in which air is temporarily added to the feed.

10 5. A method according to claims 1 or 2 in which an oxygenate is added to the feed.

6. A method according to claim 5 in which the oxygenate is MTBE (methyl-tert-butylether).

15 7. A method according to claims 1 or 2 in which the catalyst bed temperature is raised temporarily by an external heat source.

8. A method according to claims 1 or 2 in which the temperature of one or more of the reactant feeds is raised temporarily.

20

25

30